

AP Stats Chapter 9 Formula Study Sheet

Lesson	9.2 – Significance Test for a Proportion	9.3 – Significance Test for a Mean
Symbol for statistic (sample)	\hat{p}	\bar{x}
Symbol for parameter (population)	p	μ
Name the procedure	One Sample Z for p	One sample t for μ
RANDOM condition	"SRS" "Random Sample"	"SRS" "Random"
10% condition	sample $n < \frac{1}{10}$ N population	sample $n < \frac{1}{10}$ N population
NORMAL condition	Large Counts $n \cdot p \geq 10$ $n \cdot (1-p) \geq 10$	① Pop. is approx. Normal ② $n \geq 30$ CLT ③ NO Strong skew or outlier
Formula for mean of the sampling distribution	$\mu_{\hat{p}} = p$	$\mu_{\bar{x}} = \mu$
Formula for standard deviation of the sampling distribution	$\sigma_{\hat{p}} = \sqrt{\frac{p(1-p)}{n}}$	$\sigma_{\bar{x}} = \frac{\sigma}{\sqrt{n}} \approx \frac{s_x}{\sqrt{n}} = SE_{\bar{x}}$
General formula for test statistic	Test Stat = $\frac{\text{Stat} - \text{Null}}{SD}$	Test Stat = $\frac{\text{Stat} - \text{Null}}{SD}$
Specific formula for test statistic	$z = \frac{\hat{p} - p}{\sqrt{\frac{p(1-p)}{n}}}$	$t = \frac{\bar{x} - \mu}{s_x / \sqrt{n}}$
Picture		
How to find P-value	Table A or Normcdf	Table B or tcdf $df = n - 1$

4 STEP PROCESS

STATE: Parameter, statistic, hypotheses, and significance level.

PLAN: Name the appropriate inference method and check conditions.

DO: If the conditions are met, perform the calculations.

Picture, general formula, specific formula, work, test statistic, P-value.

CONCLUDE: Make a conclusion about the hypotheses in the context of the problem.